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Open Access, Open Source

Andrée Rathemacher
University of Rhode Island, andree@uri.edu

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DISCUSSION GUIDE

1. What are the fundamental characteristics of "open"? What does "open" mean?

2. What kinds of things can be "open"? Any examples from your experience?

3. Start with some definitions?

   - Definition of "open access"
   - Definition of "open source"
   - Definition of "open educational resources"
   - Open data too.

4. A key concept of the open movement is that open resources are not simply free to access (read, listen or view), but free to reuse and repurpose. Why is this important? Can anyone think of any examples of when re-use is desirable?

[Note that some of the most innovative examples of re-use are by computers, computational re-uses like data and text mining.]

5. Copyright (what it means) and Creative Commons licenses, different options.

[As you find freely available material online, how can you tell what is truly "open" as opposed to just no cost? Be sure to check license / reuse rights.]

6. Relationship between library users not just as consumers of information and culture, but as creators (e.g. maker spaces) and their being able to re-use open resources as well as apply open licenses to what they create.

7. Does "open" lend itself to certain types of products more than others? When is "open" most appropriate? When is it less so?

8. Can you think of any new ways that open resources might apply in your job?

REFERENCES

Definitions

Open access: "Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions."

> Peter Suber, "Open Access Overview," http://legacy.earlham.edu/~peters/fos/overview.htm

Open source: "In production and development, open source as a development model promotes a universal access via free license to a product's design or blueprint, and b) universal redistribution of that design or blueprint, including subsequent improvements to it by anyone." Often applies to software.

> Wikipedia, "Open Source," http://en.wikipedia.org/wiki/Open_source

Open Educational Resources: "OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge."

> William and Flora Hewlett Foundation, "Open Educational Resources," http://www.hewlett.org/programs/education/open-educational-resources
>
> http://sparc.arl.org/issues/oer

Examples of Reuse

Creative and scholarly reuse

- Mash-ups of audio, video, images; music sampling; quoting; excerpting; translating; summarizing; full-text searching.
- Adding to and improving OER's or open software; assembling a custom textbook from a variety of open educational resources.

Computational reuse (i.e. data-mining, text-mining)

Reading assistance

- Software that will act as "the antennae, prosthetic eyeballs, research assistants, and personal librarians of all serious researchers" (Peter Suber, http://legacy.earlham.edu/~peters/fos/2004_02_01_fosblogarchive.html)
- "As the volume of research information increases, with a mind-boggling 1.5 million research articles published each year, no person can realistically hope to make full

sense of this information by simply accessing and reading individual articles on their own. We must enable computers as a new category of reader to help power through this volume, thousands of articles at a time, and to highlight patterns, links, and associations that would otherwise go undiscovered. Computational tools like text mining and data mining are crucial to achieving this, and have the potential to revolutionize the research process." (Heather Joseph, SPARC executive director, *Publisher's Weekly*, Feb. 15, 2013, http://www.publishersweekly.com/pw/by-topic/digital/copyright/article/55988-publishers-blast-new-open-access-bill-fastr.html)

Extracting data from articles

- The text2genome project pulls out DNA sequences from around 3 million research papers to produce an online genome map in which each region is linked to relevant articles.
- The NeuroSynth project extracted brain-scan data from almost 4,400 research articles, allowing users to link locations in the human brain with associated research terms and topics.
- SureChem harvests and makes freely available data on molecules from some 20 million patents.
- Drug discovery. Researchers searched free abstracts from more than 20 million articles in the MEDLINE database, and discovered an indirect link between E-cadherin (a cell-adhesion molecule) and Parkinson's disease.

(Richard Van Noorden, "Text-mining spat heats up: Scientists and publishers clash over licenses that would let machines read research papers," *Nature*, March 21, 2013, doi:10.1038/495295a)

Digital humanities projects

- Ryan Cordell, Northeastern University studies networks of reprinting in 19th century American newspapers and magazines using the full-text corpus of digitized newspapers downloaded from the Library of Congress Chronicling America website. (http://www.viraltexts.org/)

OA benefit example

Jack Andraka - He won a national award at age 16 "for his work in developing a new, rapid, and inexpensive method to detect an increase of a protein that indicates the presence of pancreatic, ovarian, and lung cancer during early stages when there is a better survival rate with current treatments." http://en.wikipedia.org/wiki/Jack_andraka

Having encountered paywalls that slowed down his research, Andraka is an advocate of open access :
http://upload.wikimedia.org/wikipedia/commons/b/b7/How_Open_Access_Empowered_a_16-Year-Old_to_Make_Cancer_Breakthrough.ogv

National legislation

NIH Public Access Policy (2008) - "The NIH Public Access Policy is an open access mandate requiring that research papers describing research funded by the National Institutes of Health must be available to the public for free through PubMed Central within 12 months of publication." http://en.wikipedia.org/wiki/NIH_Public_Access_Policy

OSTP Memo (Feb. 2013) - In 2013, John Holdren, Barack Obama's director of the Office of Science and Technology Policy, issued a memorandum directing U.S. federal agencies spending at least $100 million per year on extramural research *or development* (about 19 agencies) to develop policies that would require the published results of federally funded research to be made freely available to the public within *12 months* of publication. Applies to articles *and data*; agency policies are required to license repository deposits for reuse.

https://plus.google.com/+PeterSuber/posts/8hzviMJeVHJ

http://en.wikipedia.org/wiki/Open_access

Consolidated Appropriations Act of 2014 - Section 527 directs agencies in the Departments of Labor, Health and Human Services, and Education that spend $100 million or more per year on research and development to develop policies requiring that articles reporting on their funded research are made freely available online to the public no later than 12 months after publication. Does not apply to data. Does not require reuse rights or open licenses. Only applies to coming fiscal year. Passed January 2014.

https://plus.google.com/+PeterSuber/posts/BxaAbKqv5HS

http://www.sparc.arl.org/blog/timely-development-more-action-public-access-publicly-funded-research

FASTR (Fair Access to Science and Technology Research Act) - Bipartisan OA bill introduced to both houses of Congress in February 2013. Would require U.S. federal agencies spending at least $100 million per year on extramural *research* (about 11 agencies) to develop policies that would require the published results of federally funded research to be made freely available to the public within *6 months* of publication. Applies to articles but not data; agency policies are required to license repository deposits for reuse. Not yet passed.

https://plus.google.com/+PeterSuber/posts/8hzviMJeVHJ

http://cyber.law.harvard.edu/hoap/Notes_on_the_Fair_Access_to_Science_and_Technology_Research_Act

http://en.wikipedia.org/wiki/FASTR

FIRST Act (Frontiers in Innovation, Research, Science, and Technology Act of 2014 - Section 303 of the Act states that every federal science agency must create a policy to make publicly available articles and data resulting from federally funded research. However, it allows an initial 24 month embargo period along with a possible one year extension. Instead of deposit in an OA repository, a link to the article on a publisher's web site would be an acceptable compliance mechanism. Not yet passed.

http://www.sparc.arl.org/news/letter-house-science-committee-opposition-section-303-first-act

https://www.eff.org/deeplinks/2013/11/first-act-last-open-access-reform-we-want

Affordable College Textbook Act - Introduced November 2013. "The Affordable College Textbook Act (S.1704/H.R.3538) will reduce the cost of textbooks at U.S. colleges and universities by expanding the use of open textbooks (and other open educational resources) that everyone can use, adapt and share freely." Not yet passed.

http://www.sparc.arl.org/advocacy/national/act

Selected OER statewide initiatives

2012 Washington State - "In April 2012, the Washington State Legislature passed bill HB2337 (RCW 28A.300.803), directing the Office of the Superintendent of Public Instruction to create a collection of openly licensed courseware aligned to the common-core standards and an associated awareness campaign to inform school districts about these resources."

https://digitallearning.k12.wa.us/oer/

2012 California - "Gov. Jerry Brown signed into law on Thursday a number of bills affecting California colleges and their students, including two measures designed to provide students with access to free online textbooks for 50 undergraduate courses. The measures establish a nine-member faculty council that will identify the classes for which open-source digital textbooks should be developed and oversee the texts' development, and create a digital library to house the textbooks and other courseware."

http://tagteam.harvard.edu/hub_feeds/928/feed_items/45748

2013 California - "The board that governs California's 112 community colleges has started requiring that courses, research, and other work paid for by the system chancellor's office be made available free to all users under Creative Commons "attribution" licenses. While the system will retain the copyright on the materials, other users will be able to take advantage of them as long as the originators are properly credited."

http://tagteam.harvard.edu/hub_feeds/928/feed_items/272751

OPEN ACCESS, OPEN SOURCE: SELECTED RESOURCES

Open access books

Project Gutenberg http://www.gutenberg.org/

Tens of thousands of books in the public domain. Read online or download for multiple devices. Includes some audiobooks.

Internet Archive http://archive.org/details/texts

The Internet Archive Text Archive contains a wide range of fiction, popular books, children's books, historical texts and academic books.

Open Library http://openlibrary.org/

Run by the Internet Archive, OpenLibrary is an interface to published books in the public domain that are available for download in multiple formats.

HathiTrust http://www.hathitrust.org/

A collection of millions of titles digitized from libraries around the world. The full text of books in the public domain may be viewed online and downloaded. The text of all titles may be searched.

OAPEN http://www.oapen.org/

Freely accessible academic books, mainly in the area of Humanities and Social Sciences.

Open access articles

Directory of Open Access Journals http://www.doaj.org/

Online directory that indexes and provides access to quality open access, peer-reviewed journals.

PubMed Central http://www.ncbi.nlm.nih.gov/pmc/

Free full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine.

BASE (Bielefeld Academic Search Engine) http://www.base-search.net/

Search engine for academic open access web resources.

Google Scholar http://scholar.google.com/

Can help identify OA version of scholarly articles if you have known citation.

Open Educational Resources

Edutopia Open Educational Resources (OER): Resource Roundup
http://www.edutopia.org/open-educational-resources-guide

An educator's guide to open educational resources (OER), including online repositories, curriculum-sharing websites, sources for lesson plans and activities, and open textbooks.

OER Commons http://www.oercommons.org/

Open Educational Resources LibGuide (UMass Amherst Libraries)
http://guides.library.umass.edu/oer/

Other open resources

Wikimedia Commons http://commons.wikimedia.org/

Database of freely usable media files (images, sounds, videos) to which anyone can contribute.

Internet Archive http://archive.org/details/texts

The Internet Archive also offers free online digital audio and video files, including music and movies.

Digital Public Library of America http://dp.la/

Portal to the openly available, digitized contents of America's libraries, archives, and museums.

Library of Congress American Memory http://memory.loc.gov/

Free access to written and spoken words, sound recordings, still and moving images, prints, maps, and sheet music that document the American experience.

Europeana http://www.europeana.eu/

Internet portal to millions to books, paintings, films, museum objects and archival records that have been digitized throughout Europe.

MusOpen https://musopen.org/

Recordings, sheet music, and textbooks to the public for free, without copyright restrictions.

Creative Commons Licenses http://creativecommons.org/licenses/

Licenses that give creators a simple, standardized way to grant copyright permissions to their creative work, allowing content to be copied, distributed, edited, remixed, and built upon.

Google Advanced Search http://www.google.com/advanced_search

Licenses that give creators a simple, standardized way to grant copyright permissions to their creative work, allowing content to be copied, distributed, edited, remixed, and built upon.

Flickr Advanced Search https://www.flickr.com/search/advanced/

Allows a search of Creative Commons-licensed content on Flickr.

Open source software

Open Source Initiative (OSI) http://opensource.org/

The Open Source Initiative (OSI) is a global non-profit that supports and promotes the open source movement.

The Free Software Directory https://directory.fsf.org/wiki/Main_Page

The Free Software Directory is a catalog of useful free software that runs under free operating systems. FSF staff and volunteers work together to collect detailed information about free software programs and organize it in a clear and accessible format.

FOSS (Free Open Source Software) http://freeopensourcesoftware.org/

A public Wiki about Free Open Source Software.

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